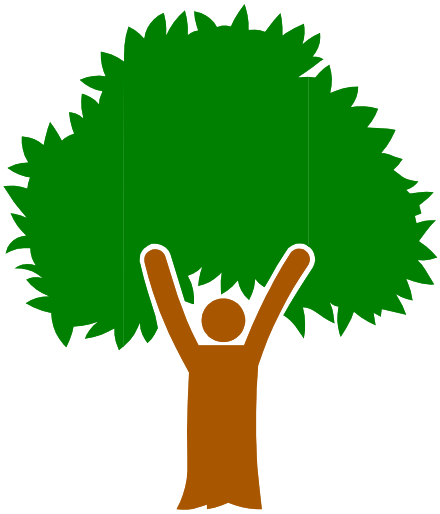
Health and Nutrition

Assessment Handbook (HNAH)



Missouri Department of Health and Senior Services
Division of Community and Public Health
Bureau of WIC and Nutrition Services

Revised August 2009

This institution is an equal opportunity provider.

Table of Content

The WIC Mission Statement

To improve the nutritional health status of financially eligible women, infants, and children in Missouri who are at nutritional risk by providing nutrition education, supplemental foods, and referrals to health care.

Documentation Guidelines

- Use black or blue permanent ink for entries on required hardcopy forms.
- Date, time and sign all entries. Use first initial, last name and title.
- Entries are to be legible with no blank spaces left on a line or in any area of the documentation. If a space is left on a line, draw a line through the space to the end of the line.
- For errors, draw a single line through the error, write error, initial and date the line. Do not attempt to erase, obliterate or "white out" the error.
- Be sure to use only abbreviations approved by the state WIC office.
- Never document for someone else or sign another person's name.

Note: Resource adopted from Missouri Department of Health and Senior Services, Public Health Nursing Manual, March 2006.

Anthropometric Equipment Overview

Contact other agencies that have purchased the same equipment to find out if they are pleased with their purchase. Before purchasing any equipment, determine if there are companies in the area which provide service or repairs if needed. You may also contact the Technical Assistance (TA) team in your district for recommendations.

When contacting a company to place an order confirm whether the company has a 30-day return policy and if the company guarantees the equipment against defects for at least one year. Determine who should be contacted regarding returns or repairs if applicable. Inquire about price and volume discounts and cost of replacement parts. Local WIC providers are responsible for maintenance, repair costs and replacement of anthropometric equipment as allowed by their contract.

Minimum Criteria for Recumbent Length Board

- Constructed of durable, easy to clean materials with no sharp edges or unfinished parts.
- Length board shall be a firm, inflexible, flat horizontal surface.
- Measuring tape shall be made of a non-stretchable material (imbedded if possible), which is clearly marked to one-eighth inch (1/8 inch or 1 mm, or less).
- The measuring arm on the platform scale is NOT an allowable device to obtain a height measurement for children or adults.
- A fixed head piece at a minimum six inches wide [always at right angle (90 degrees) to the measurement surface]. Zero inch mark must be exactly at base of headboard.
- A smooth movable perpendicularly mounted footboard, perpendicular to the tape.

Minimum Criteria for Standing Height

- Measuring tape shall be attached to a firm surface, clearly marked to one-eighth inch (1/8") or 1 mm or less, (entire tape mounted on a board or attached to a wall without floor moulding).
- Equipment should allow the heels, buttocks and shoulder blades to touch the equipment surface when measuring.

- Should have a movable or attached headboard; if mounted, always at right angle (90 degrees) to the measurement surface.
- Headboard should be wide enough to measure at the participant's crown while standing.

Minimum Criteria for Weighing Equipment

Mechanical Scales (Guidelines)

Scales should be constructed of durable, easy-to-clean material with no sharp edges. All scales should be cleaned on a daily basis and as needed.

- Balance beam scales are recommended for routine clinic use.
- Spring-type bathroom scales are **NOT** acceptable.
- A scale must have a mechanism so it can be balanced at zero with a provision for immobilizing the zeroing weight. A screw type is preferred.
- The zero balance should be checked before every clinic session, routinely in the clinic and after the scale has been moved.

Infant Scale

- Table model scale should be able to weigh infants up to approximately 2 years of age.
- Should have sturdy infant tray (bucket or car seat type).
- Should be marked in increments of one ounce or less and accurate to that degree.
- Should have capacity at minimum of 35 pounds.

Adult/Child Scale

- Should have a platform that is sturdy and easy to clean.
- Should be marked in increments of four ounces or less and accurate to that degree.
- Should have a capacity of at least 300 pounds. Note: LWP may purchase additional weights that can be added to the scale for participants weighing greater than 300 lbs.
- Should be placed on a hard solid surface; if floor is carpeted then scale must be placed on a piece of plywood.

Digital Scales (Guidelines)

- Shall have sturdy tray to support the infant.
- Shall have automatic-zero.
- Shall have automatic-tare to zero.
- Shall have an accuracy of within ½ ounce or one ounce for pediatric scales and ¼ pound (four ounces or one hundred grams) for adult scales.
- Should weigh up to 40 lbs or 20 kg for infant's scales.
- Should have a feature where the weight can be "locked" in.
- Should provide accurate measurements, with minimum error at both low and high ends of the scale range.
- The scale should provide measurement reproducibility (i.e. consistent readings).

Other features to consider:

- Should consider a scale for weighing infants with a large enough platform, preferably bucket shaped, to ensure the infant's safety.
- Should select a scale that is durable and easy to maintain, easy to wipe off or replace liner after each use.
- Should select scale depending on where the scale will be used (e.g., satellite clinics) and the power source could be electrical, battery or both electrical and battery operated.

- Should select a digital scale that has the provision to weigh participants who weigh greater than 300 lbs.

Note: Digital home bathroom scales are not acceptable for use in the Missouri WIC program.

Infant weight is entered in MOWINS as pounds and ounces. Local WIC Providers may use this conversion chart when converting a decimal weight to ounces. Use only if the scales display the decimal weight in either one or two tenths of an ounce. If your infant scale displays the weight in pounds and ounces, this chart is not needed. Refer to the manufacturer's equipment specifications for additional operating instructions.

Reading as a decimal on the digital scale	Conversion of decimal measure to ounces
0.1	**2**
0.2	**3**
0.3	**5**
0.4	**6**
0.5	**8**
0.6	**10**
0.7	**11**
0.8	**13**
0.9	**14**

Note: Resources used for rounding weight to the nearest ¼ pound adopted from Michigan WIC Anthropometric Measurements (Anthropometric Manual Rev 04/02/04) and Maryland WIC Program.

Digital Scales Definitions

Digital Scales- Represent data as numbers by processing, storing, transmitting, representing, or displaying data in the form of numerical digits through the use of distinct electronic or optical pulses that represent the binary digits 0 and 1.

Tare – The weight of a blanket or diaper that can be deducted from the total weight to obtain an accurate weight of the baby when used in reference to infant scales.

Graduation - Signifies the amount of discrimination that the measurement instrument allows. With most professional infant scales the degree of difference is down to a fraction of an ounce while maintaining a precise reading.

Scale Weight - Displayed in pounds (lbs) and constitutes the actual weightiness of the scale for the purpose of portability.

Cradle Size - Dimensions that represent the holding area for the baby only and are listed as the cradle width by cradle length. The actual dimensions for the scale as a complete unit will vary.

Lock-In Weight - A feature that the pediatrician or mother can use to carefully remove the baby from the scale while the baby's weight remains displayed.

Weight Memory Recall **-** A function that displays the last stored weight reading for comparison purposes. This function allows the user to instantly assess any change in the infants' weight.

Scale Inspection

- New scales require an inspection before use and then annually.
- The Division of Weights and Measures will inspect digital scales and balance beam scales at no charge to local WIC providers, including WIC providers that are not affiliated with a public health department.
- LWPs will contact Division of Weights and Measures (573.751.5639) to request an inspection. They will provide the contact person's name at the agency, phone number and location of the scale to be inspected. Weights and Measures may request that the LWP transport all scales needing inspection to the same location. It is recommended that LWP request service one month in advance.
- The Division has inspectors for small scales on this website link: Small Scales – Territory Map in pdf format (http://mda.mo.gov/weights/pdf/smallscales.pdf)
- The Division of Weights and Measures inspects scales. They do not calibrate scales.
- When scales do not pass inspection, LWPs may contact Division of Weights and Measures for a list of registered service technicians regarding calibration services. The LWP cannot use this scale until it is repaired and passes inspection.
- LWPs can complete their own scale inspections using proper weights and procedures.

Weight

All participants shall be weighed at every certification and re-certification. Record data collected in MOWINS.

- Infants and children two years of age or younger are to be weighed on an infant scale either lying down or sitting on the scale. Infants will be weighed again at their scheduled follow-up visit (or more frequently if they are determined high-risk).
- Children over two years of age and women are weighed on an adult scale while standing upright.
- Pregnant women are to be weighed at bimonthly intervals (monthly if she is determined high-risk).

Procedures for an Infant or Child Under 2 Years of Age

1. Instruct parent/guardian to undress all infants down to a dry diaper. Children will need to remove their shoes and any heavy outer clothing. Note: child needs to have a dry diaper.
2. Balance the scale (if using scale paper balance scale with paper).
3. Place the (undressed, dry diaper only) infant or child in the center of the scale.
4. Move the weights away from zero until the marker drops into the center point of the beam's cutout area.
5. Read the weight to the **nearest ounce** and record information in MOWINS.
6 When finished, return both the upper and lower beam weights to zero.

Infant Test Weighing

Test Weighing- Weighing a baby before and after breastfeeding to determine intake.

Purpose for Test Weights

- To monitor intake and to assure mothers that their infants are receiving an adequate amount of breastmilk from each nursing session.
- To verify if infants are receiving enough breastmilk so that the need for formula supplementation can be determined.

Principles to Consider

- A digital scale must be accurate to 2 grams or less and have an integration function that allows for infant's movement.
- Infant is weighed before and after the feeding, either without clothes or with the exact same clothing.
- The difference in grams between the first and second weight is considered the intake in milliliters. (Some scales automatically store weights and compute the difference in milliliters- see manufacturer's instructions.)
- An **International Board Certified Lactation Consultant (IBCLC)** must conduct or supervise test weighing in the Local WIC Provider facility.

Procedure for a Woman or Child Over 2 years of Age

1. Instruct parent/guardian/participant to remove any excess clothing like a jacket, sweater, or sweatshirt and to empty heavy items from their pockets and remove their shoes.

2. Balance the scale. The scale is balanced when the marker indicates zero (or the marker is in the middle of the "cut out" area on the balance beam scale). When necessary, move the weights to zero and turn the adjustment screw until the scale is balanced.
3. Instruct participant to stand in the center of the scale's platform, look straight forward, feet slightly apart and with their arms hanging naturally at their side.
4. Move the beam's lower weight away from the zero until the marker drops below the center point. Then slide the lower weight back one notch toward zero until the marker is now above the center point.
5. Slide the beam's upper weight away from zero until the marker is centered. It may be necessary to move the upper weight back-and-forth a few times until the scale is balanced.
6. Read the weight measurement to the **nearest ¼ pound** and record information MOWINS.
7. When finished, return both the upper and lower beam weights to zero.

Height or Length

All infants shall be measured lying down (recumbent or supine) on a measuring board. In order to measure length accurately, two people are required.

Height (Stature) – Measurement of the distance from the top of the head to the bottom of the feet that is performed standing upright.

Length (Recumbent) - Measurement of the distance from the top of the head to the bottom of the feet that is performed lying down.

Height and Length are **NOT** the same and cannot be used interchangeably.

Procedure for an Infant or Child Under 2 Years of Age

1. Place scale paper on the measuring board, if applicable.
2. Lay infant/child face up on the measuring board; body must be straight, lined up with the measuring board.
3. Have the parent/guardian hold the infant's/child's head firmly against the non-moveable headboard until the measuring is completed. Have the parent/guardian place the other hand on the infant's/child's abdomen.
4. LWP staff use one hand to hold the infant/child's legs together just above the *knees* and gently push both legs down—fully extending the infant's/child's legs. Avoid using just one leg to measure, as this technique can displace the hip and make the infant/child appear longer than actual length measurement.
5. With the other hand, move the footboard until it is resting firmly against the infant/child's heels. The toes should point directly up.
6. Read the measurement to the **nearest 1/8-inch** and record information in MOWINS.

Procedure for a Woman or Child Over 2 years of Age

1. Shoes taken off; hat removed; pigtails or large hair-dos should not be in the way.
2. Stand on a bare, flat surface, heels slightly apart and flat on the floor.
3. Back straight as possible; knees should not be bent.

4. Heels, buttocks, shoulder blades and back of head should touch the wall or measuring surface.
5. Arms hanging naturally to side, shoulders relaxed.
6. Looking forward – eyes straight ahead.
7. Slowly lower moveable headboard until it touches crown of head firmly.
8. Read measurement to the **nearest 1/8-inch** and record information in MOWINS.

Individuals with Disabilities

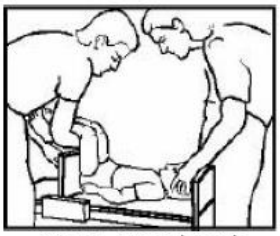
In MOWINS, under the *Height/Weight* tab select "Participant Disability" when the participant has a condition that prevents them from being weighed and measured using standard procedures. Non-standard procedures may be used or recent data may be obtained from the health care provider as referral data.

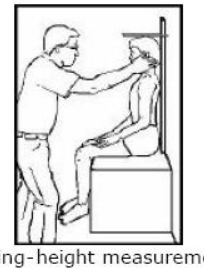
Children who are unable to stand without support should be measured by Crown Rump measurement. See http://depts.washington.edu/pwdlearn/web/pdfs/mod1print.pdf for procedures. Document the non-standard measurement method used.

The measurements will not correlate directly with height or length, but can indicate a child's rate of growth on CDC growth charts. Although the measurements will be below the 5th percentile for age, they will show whether the child is following a consistent growth curve.

Using the notes in MOWINS document "Crown-Rump" which indicates how the height or length measurements were taken. For children who are unable to stand indicate in the notes the weight was obtained by the parent/guardian holding the child. Assign all applicable risk factors. Tailor the nutrition education contact to meet the needs of the participant.

Note: Resources used for individuals with disabilities adopted from CDC website on growth charts, Department of Education Washington and Wisconsin WIC Program *(Operations Manual Rev 04/01/03)*.


Crown-rump length


Sitting-height measurement

Children who are unable to stand on the adult scale may be weighed using the following method: weigh the adult holding the child and record the combined weight. Then weigh the adult alone. Subtract the adult's weight from the combined weight. The difference represents the child's weight. (Note: This procedure may also be used for uncooperative children who refuse to be weighed using standard procedures.)

Growth Charts

Anthropometric (growth) charts are standards for growth developed from studies of normal, healthy children. The growth grid displayed will be appropriate for the gender of the participant. The growth grid will not plot for the following circumstances:

- ✓ If the participant is greater than 36 months and measured recumbent
- ✓ If the participant is less than 24 months and measured standing

These growth chart grids are divided into:

- ✓ Birth to 36 months Length for Age
- ✓ Birth to 36 months Weight for Age
- ✓ Birth to 36 Months Weight for Length
- ✓ Premature – Length for Age
- ✓ Premature – Weight for Age

Birth to 36 months charts – Length/Age, Weight/Age and Weight/Length

The Percentile Curve is percentage which will be displayed when viewing the grid. The system will display the 3rd, 5th, 10th, 25th, 50th, 75th, 90th, 95th and 97 percentile. The growth grid will contain zero (0) or more data points showing the measurement taken at a particular point in time. The data point will display as a triangle in the color red when it is located above the 90th percentile curve or below the 5th percentile curve for the appropriate plot on the horizontal axis. When it does not fall in these ranges, it will display as a circle in the color blue.

The data points on the growth grid will be connected by a 'joining line' to indicate the growth of the participant. The data point will display as a triangle in the color red when it is located above the 90th percentile curve or below the 5th percentile curve for the appropriate plot on the horizontal axis. When it does not fall in these ranges, it will display as a circle in the color blue.

Premature Growth Charts

The plots on the grids are based on chronological age and NOT adjusted gestational age.

Length/Age Grid

The grid displayed will be appropriate for the gender as it relates to the length/age on the grid. *Standard Deviation +2 Curve (26 - 40 Gestational Weeks Grid)* this curve on the growth grid represents the second standard deviation above the mean of length for age measurements. The curve will display as a gray line from 26 - 40 gestational weeks. It will be labeled at the right edge of the growth grid

*Mean Curve (26 - 40 Gestational Weeks Grid) t*his curve on the growth grid represents the mean length for age measurements. The curve will display as a prominent gray line from 26 to 40 gestational weeks. It will be labeled at the right edge of the growth grid.

Standard Deviation -2 Curve (26 - 40 Gestational Weeks Grid) this curve on the growth grid represents the second standard deviation below the mean of length for age measurements. The curve will display as a gray line from 26 to 40 gestational weeks. It will be labeled at the right edge of the growth grid.

The vertical axis of the growth grid allows the user to reference the scale of the measurements plotted on the growth grid. The axis will have a major division of 5 units and a minor division of 5 units. The minimum value of the axis is 12 and the maximum value is 22. The title for the axis is the text "Length (Inches)". The horizontal axis of the growth grid allows the user to reference the category of the measurements plotted on the growth grid. The minimum value of the axis is 26 and the maximum value is 40. The title for the axis is the text "Weeks Gestation".

Weight/Age Grid

Refer to the length/age for details regarding the mean curve and standard deviation. The vertical axis of the growth grid allows the user to reference the scale of the measurements plotted on the growth grid. The axis will have a major division of 5 units and a minor division of 5 units. The minimum value of the axis is 18 and the maximum value is 33. The title for the axis is the text "Length (Inches)". The horizontal axis of the growth grid allows the user to reference the category of the measurements plotted on the growth grid. The minimum value of the axis is 0 and the maximum value is 12. The title for the axis is the text "Age (Months)".

Body Mass Index (BMI)

Body Mass Index (BMI) is an anthropometric index of weight and stature and is the commonly accepted index for classifying adiposity in adults and has become the recommended index for children and adolescents. In adults, BMI is expressed as a specific value. For children and adolescents, BMI is age- and gender-specific and is identified by percentiles on the growth chart after incorporating the person's (child or adolescent) age as a factor (not just the weight and stature alone, as with adults).

BMI is a screening tool used to identify individuals who are underweight, overweight or normal weight. BMI is not a diagnostic tool. For example, a child who is relatively heavy may have a high BMI for his or her age, but to determine whether the child has excess fat, further assessment is needed that might include a variety of skin-fold measurements which is not a required WIC function.

BMI Mathematical Formula

Weight in pounds divided by height in inches divided by height in inches multiplied by 703 equals BMI. Round the calculation to the nearest tenth.

$$\frac{\text{Weight (lbs)*}}{\text{Height (in)**}} \div \text{Height (in)**} \times 703 = \text{BMI}$$

* Weight must be expressed in 1/4th pound, if not in whole pounds

Example: *¼ lb = .25*
½ lb = .5
¾ lb = .75

** Height must be expressed in 1/8th inch, if not a whole inch

Example: *1/8th inch = .125*
2/8th inch = .25
3/8th inch = .375
4/8th inch = .5
5/8th inch = .625
6/8th inch = .75
7/8th inch = .875

Standards for Children

BMI is calculated for children 2 years and older who are measured by stature (standing height), and who will then be plotted on the 2 to 6 years chart, which includes the BMI-for-Age growth graph.

There are several advantages to using BMI-for-Age as a screening tool for underweight, overweight, or at risk of overweight in children:

- BMI-for-Age illustrates age-related changes in growth. Age and stage of sexual maturation are highly related to body fat.
- BMI-for-Age is the only indicator that allows us to plot a measure of weight and height with age on the same chart.
- BMI-for-Age is the measure that is consistent with the adult index and can be used continuously from 2 years of age to adulthood. BMI values at younger ages have a weak association with adolescent or adult obesity. These characteristics allow us to use

the BMI to track body size throughout the life cycle. BMI in childhood is a determinant of adulthood BMI.

- BMI-for-Age correlates with clinical risk factors for cardiovascular disease including hyperlipidemia, elevated insulin and high blood pressure.

Standards for Prenatal Women

The system will calculate the prenatal BMI on the Health Information tab using her pre-pregnancy weight and risk factors related to pre-pregnancy weight could be assigned (e.g. RF 101) however, the system calculates the BMI from her current weight on the Height/Weight tab and for plotting on the PWGC and risk factors could be assigned based on the calculation and not plotting (e.g. 131).

When the pre-pregnancy weight is not known, per CDC guidelines use the first trimester weight, which she self-reports. When the pre-pregnancy height is not known, obtain current height. BMI determination also assists the counseling staff with recommendations regarding weight gain during pregnancy.

Categories of underweight, normal weight, overweight or obese BMI, have been developed for WIC-eligible women and are reflected on the Prenatal Weight Gain Chart. WIC has determined the following guidelines for BMI weight group classifications of WIC- eligible women:

- BMI <19.8 is considered "Underweight"
- BMI 19.8 – 26.0 is considered "Normal Weight"
- BMI 26.1 – 29.0 is considered "Overweight"

Standards for Postpartum Women

Obtain current weight and height at time of certification/recertification to be used for BMI determination of postpartum women (breastfeeding or non-breastfeeding) and adolescent females.

Prenatal Weight Gain Chart (PWGC)

The Prenatal Weight Gain Chart is used to document weight patterns during pregnancy. The chart's weight gain grid is based on the Institute of Medicine (IOM) recommendations for maternal weight gain. The PWGC is an essential tool for nutrition assessment and counseling, as well as risk determination for pregnant women.

It serves as a guide to the appropriate rate and quantity of weight gain during pregnancy for the prenatal woman with an underweight, normal weight, overweight. Two references are needed to plot: pounds gained or lost, represented by the horizontal lines on the grid (along the vertical axis); and weeks gestation, represented by the vertical lines on the grid (along the horizontal axis).

MOWINS determines the prenatal woman's recommended weight gain channel (recommended total weight gain range in pounds), according to the woman's pre-pregnancy weight group and Body Mass Index (BMI).

Pre Pregnancy Weight Group	Pre Pregnancy Body Mass Index (BMI)	Recommended Total Weight Gain Ranges for Pregnant Women (pounds)
Underweight	<19.8 BMI	28-40 lbs
Normal Weight	19.8 to 26.0 BMI	25-35 lbs
Overweight	26.1 to 29.0 BMI	15-25 lbs

MOWINS automatically plot the weight gain/loss on graph. The vertical axis represents prenatal weight gain/loss in pounds. The horizontal axis represents week's gestation. Mark a dot at the intersection of the two lines. The data point will display as a triangle in the color red when it is located above the 90th percentile curve or below the 5th percentile curve for the appropriate plot on the horizontal axis. When it does not fall in these ranges, it will display as a circle in the color blue. There will be 3 curves printed on the prenatal growth grid from bottom line to top with additional text to represent Low, Recommended and High. The bottom line will display text of 'Low'. The middle line will display text of 'Rec.' (for recommended) and the top line will display text of 'High'.

The data points on the growth grid will be connected by a 'joining line' to indicate the growth of the participant. The data point will display as a triangle in the color red when it is located above the 90th percentile curve or below the 5th percentile curve for the appropriate plot on the horizontal axis. When it does not fall in these ranges, it will display as a circle in the color blue.

Hematological Overview

Iron is of special interest to WIC because the populations served by WIC are those who are the most likely to be deficient in iron. The only way to be sure if a person has adequate iron is to do some type of blood test.

Minimum Purchasing Criteria for Hematological Equipment

- Equipment must be Clinical Laboratory Improvement Amendments (CLIA) exempt/waived
- Equipment must be approved for pediatric and adult use
- Accuracy of the equipment must be checked by performing either a quality control or self-test (daily)
- Machine must be durable and easy to clean
- Results must be easy to read to ensure accuracy
- Indicate read-out increments for hemoglobin testing of .1mg/dl or $1/10^{th}$ of a percent
- Power source is electrical or battery or both

Minimum Selection Criteria for Sharps

- Sterile, single use disposable stylet
- Capable of controlling the depth of the puncture
- Retractable type recommended

Minimum Selection Criteria for Disposable Containers

- Puncture proof for sharp objects
- Hazardous materials bag for blood-related materials (e.g. bloody gauze, gloves, ect.)
- Labeled as "Biohazard"
- Placed in a secure place

Minimum Criteria for Microcuvettes

- Microcuvettes are stored at room temperature, away from any direct heat source.
- The vial should be kept tightly capped and cuvettes should be removed as needed for testing just prior to use. Unopened cuvettes have a shelf life of two (2) years from the date of manufacture.
- The expiration date is printed on each vial. Do not use expired Microcuvettes. The expired Microcuvettes should be returned to state office.
- Vials of cuvettes that have been opened are stable for three (3) months if the cap is kept on tightly between use.

- When opening a new vial, label with the date opened.

Exemptions for Blood Work

A WIC participant can be certified or recertified without blood work being obtained, under certain exceptions, if they have another qualifying risk factor. Exceptions when blood work would not be required: a religious belief, and/or a medical condition (e.g., hemophilia, osteogenesis omperfecta (fragile bones) or a serious bone disease). If an applicant or applicant's parent or guardian refuses to have a blood test done, and the refusal is not based on medical or religious grounds, the LWP shall explain the importance of screening for low Hemoglobin/Hematocrit. The local WIC provider shall document in MOWINS the reason the blood work was not obtained. The participant must be informed that a potential risk factor could be assigned if blood work is obtained.

Anemia Screening Guidelines

Local WIC providers can perform two types of hematological tests (hematocrit or hemoglobin test) to determine a participant's iron status. Iron deficiency, one of the most common nutritional deficiencies, is of special interest to WIC because the populations served by WIC are most likely to be iron deficient.

A diagnosis of anemia can only be made by a physician or other health care provider (physician assistant or nurse practitioner). The anemia screening performed in the WIC clinic provides information on the hemoglobin status of the participant (low or normal), enables staff to assign the applicable nutrition risk factor, guides nutrition education and assists in making appropriate referrals.

The chart on the next page indicates the timeframes when local WIC provider staff shall collect blood work data.

Missouri WIC Program
ANEMIA SCREENING GUIDELINES

	Prenatal	Breastfeeding and Non-breastfeeding	Infants 0-11 Months	Children 12-23 Months	Children 2-5 Years
Data must be reflective of category[1]	Yes	Yes	Yes	Yes	Yes
Timeframes to collect bloodwork data	At the earliest opportunity during the pregnancy, usually the first visit	4-6 weeks postpartum	Between 9-11 months of age[2]	One blood test is required between 1 – 2 years of age (recommended at 15-18 months of age, ideally to be done 6 months after the infant screening) [3]	Once every 12 months for children 2-5 years of age whose blood test results were within the normal range at their last certification.[4] If last blood test was abnormal, recheck at next recertification visit.
Other issues specific to category and/or age	The option to defer the collection of blood test data for 90 days includes presumptively eligible pregnant women, provided a risk is identified within the 60-day time frame allowed for presumptive eligibility.	For breastfeeding women 6-12 months postpartum, no additional blood test is required if a blood test was already obtained after delivery and documented by the WIC local agency.[5]	A blood test before nine months of age may be appropriate for preterm and low birthweight infants or infants not fed iron-fortified formula. All other infants should be screened for anemia at 9 -11 months of age. [6]	One blood test taken at or before 12 months cannot fulfill the requirement for both the infant and the 1-2 year old child screening.	Children 2-5 years of age with a positive anemia screening result must have a blood test at each recertification visit until the hemoglobin or hematocrit is within normal limits as defined by the Missouri WIC Program Guidelines.

[1] Bloodwork data must be documented for all participants greater than 9 months of age (with the exception of breastfeeding women 6-12 months postpartum) at the time of certification or within 90 days of certification, so long as the applicant is determined to have at least one qualifying nutritional risk factor at the time of certification. The use of referral hematological data is permitted as long as: a) it is reflective of a woman applicant's category; b) it conforms to the anemia screening schedule for infants and children; and c) the date of the blood test, if different from the date of certification, is recorded.

[2] The use of bloodwork data taken before 9 months of age for certification purposes, is permissible to allow for flexibility on a case-by-case basis. Refer to policy for details. Children between 9 – 18 months of age are at the highest risk of any group of iron deficiency. CDC recommends two screenings during this vulnerable time (Morbidity and Mortality Weekly Report; April 3, 1998; Vol. 47; No. RR-3)

[3] CDC's Morbidity and Mortality Weekly Report (MMWR); April 3, 1998; Vol. 47; No. RR-3

[4] Children 24 months of age (minimum 22 months of age) are required to have bloodwork data for the 2-year old cert/recertification visits.

[5] For breastfeeding women being (re)certified at 6-12 months postpartum who had a positive anemia screen result when tested after delivery, the WIC health professional should ensure and document that appropriate treatment and follow-up occurred. A follow-up blood test in such a case is an allowable WIC expense.

[6] April 3, 1998; Vol. 47; No. RR-3)

HemoCue® Hemoglobin System

(Information provided by HemoCue, Inc.)

Purpose

The HemoCue Hemoglobin System is used for the quantitative determination of hemoglobin in blood using a specially designed photometer, HemoCue Hemoglobin Photometer, and specially designed microcuvettes, HemoCue Hemoglobin Microcuvettes.

The quantitative hemoglobin determination is indicated as a general fundamental test in acute as well as elective care. The test is used in assessing the status of a patient in such clinical situations as hemorrhage, hemolysis, dehydration and other shifts in plasma volume – and for verifying the results of transfusion or treatment of other deficiency states such as malnutrition.

Hemoglobin Training

As of January 2000, training for hematological procedures is not taught during the state-offered training sessions. Staff must complete required training before before they can perform hemoglobin/hematocrit blood work on participants.

- A Registered Nurse (RN) or HemoCue Clinical Education Specialist can provide the required training. *Note: for an RN, another RN must validate procedures.*
- HemoCue will provide the training at no cost to the local WIC Provider. Call 800-881-1611 to arrange training.
- Document in the training file when the staff completed the required training.

Procedure for Capillary (Finger) Testing

1. *Note: Toe sticks are not allowed. Heels can be used until the infant is walking*. *Once the infant begins to walk, a finger stick is required*.

   Do a finger or heel puncture (see note above). The participant's fingers should be straight but not tense, to avoid stasis. For best results, use the middle or ring finger for sampling. Avoid fingers with rings for sampling. Remove a cuvette from the vial and recap the vial immediately.

2. Clean the puncture site with alcohol. Wipe off the alcohol with a clean, dry lint free wipe or allow it to air dry completely.

3. Using your thumb, lightly press the finger from the top of the distal knuckle to the tip. This stimulates the blood flow towards the sampling point.

4. Position the lancet device so that the puncture will be made across the whorls (lines) of the fingerprint. Press the lancet firmly against the finger prior to activating the lancet to aid in obtaining a good sample.

5. While maintaining gentle pressure on the tip of the finger, perform the stick off-center on the fingertip. Discard the lancet in an approved container.

6. Using a dry gauze or other lint free tissue, wipe away the first two or three large drops of blood, applying light pressure as needed again until another drop of blood appears. This stimulates blood flow and lessens the likelihood of a dilutional effect by interstitial fluid. Avoid "milking of the finger."

7. Make sure that the drop of blood is big enough to fill the cuvette completely. Hold the cuvette at the "wing" end and introduce the cuvette tip into the middle of the drop of blood. Fill the cuvette in one continuous process. Do not refill a partially filled cuvette.

8. Wipe off any excess blood from the outside of the cuvette using a clean, lint free tissue, taking care not to touch the opened end of the cuvette.

9. Visually inspect the cuvette for air bubbles in the optical eye. If bubbles are present in the optical eye, discard the cuvette.

10. The filled cuvette should be analyzed immediately or at the latest within 10 minutes after it has been filled. Filled cuvettes are to be kept in the horizontal position. Place the filled cuvette into the cuvette holder and gently slide the holder into the measuring position. The result will be displayed within 60 seconds. Pull the cuvette holder out to the loading position. Remove the cuvette and discard it in an appropriate biohazard container.
11. **Change gloves between all participants, including family members** after completing the procedures.
12. Turn the power switch to "off" at the conclusion of all testing for the day.

Repeat Hemoglobin When Low Values Are Obtained

Once the low hemoglobin has been reported to the participant's health care provider who will monitor the situation, there is no need for repeat blood work until the participant's next recertification.

Maintenance

- No preventative maintenance is needed for the electronic components of the photometer.
- The cuvette holder should be removed at the end of each day of use for cleaning. Alcohol or mild soap solution may be used. It may also be autoclaved. It is important that the holder is completely dry before being replaced in the photometer.
- The exterior of the photometer may be cleaned as necessary with alcohol or a mild soap solution.
- Local WIC Providers shall assure accuracy of hematological equipment by following the manufacturer's recommendations, instructions for usages, calibrations, service and cleaning.

Repair Service

- HemoCue has provided the following telephone number: 1-800-426-7256. The HemoCue staff can answer questions on issues such as power cord problems and general problems with the analyzers or make the appropriate connections to someone who can address a more complicated problem.

Procedures When Microcuvettes Arrive in Your Agency

When you receive the order, please verify the number of microcuvettes received with the number listed on the packing slip. If the number of microcuvettes in the package is the same as the packing slip, sign and date the packing slip. Please fax the packing slip to State WIC office at 573-526-1470 within one (1) week of receiving the shipment. Confirmation on the packing slip is required in order for the State WIC Office to pay for the microcuvettes. If the number of microcuvettes received is different from the packing slip, please call 1-800-392-8209. Expired microcuvettes should be mailed to the State WIC Office at PO Box 570, Jefferson City, MO 65102. If you find that you are in need of microcuvettes, please email the State WIC Office at WICOperations@dhss.mo.gov or call 1-800-392-8209.

Nutrition Assessment

WIC Certifiers and CPAs shall enter the VENA questions in MOWINS at certification, recertification and infant reassessment. WIC Certifiers will be able to assess the questions in MOWINS (questions with an asterisk). CPAs will review the completed nutrition assessment for nutrition education and counseling based on whether the participant is high-risk (30 days) or non-high risk (60 days).

Guidelines for Infant's Nutrition Assessment Form

Reference the USDA Revision 8 Dietary Risk Factor (RF) materials for each Nutrition Assessment form for more specific information.

Anytime "don't know" or "other" is checked, the CPA or Nutritionist needs to ask additional open-ended questions to determine the outcome before assigning any dietary risk factor(s).

Subcategory numbers can be used to record in general notes the topic of the nutrition education provided to the participant, parent or caretaker, e.g. 411.1 (411 is the risk factor and 411.1 is the topic discussed.)

Dietary Risk Factor 411

Dietary Risk Factor 411 is based on routine use of feeding practices that may result in impaired nutrient status, disease, or heath problems.

- Question #9, you would assign risk factor 411 if anything other than breastmilk or iron-fortified formula is marked.

  - The number 411.1 refers to the specific guidelines addressed in the USDA's policy memorandum. You can use the subcategory number to record the topic discussed in regards to nutrition education.

- Questions #12 & #13 have been designed to help assess, for example, inability to recognize infant's cues for hunger and satiety.

- Question #15 will help assess for limited frequency of nursing for the exclusively breastfed infant. Example: scheduled feedings instead of on demand feedings.

- Questions #18 through #21 will help to assess for limited or no access to safe water supply, heat source for sterilization, refrigerator or freezer for storage or improperly handling and storage of breastmilk.

- Questions #24 through #28 will help assess for limited or no access to safe water supply, heat source for sterilization, refrigerator or freezer for storage or improperly preparing, handling and storage of formula.

  - Question #24 would require the CPA or Nutritionist to determine if the dilution of formula does not follow the manufacturer's recommendations.

- Question #29 under "Solid Foods and Juices" section will assess for improperly using nursing bottles or cups or inappropriate type and timing of complementary foods; or disregarding the developmental feeding needs of the infant.

  - Examples of improper use of nursing bottle could be: is the infant being fed any sugary-containing fluids, such as soda/soft drinks, gelatin water, corn syrup solutions, or sweetened tea in a bottle. Is the infant allowed to fall asleep or be put to bed with a bottle or walking around with a bottle, propping the bottle or adding any food (cereal or other solid foods) to the infant's bottle?

- Question #30 addresses feeding foods, such as honey, to an infant that could be contaminated with harmful microorganisms or toxins.

  - The CPA or nutritionist needs to assess if the parent/guardian is feeding inappropriate complementary foods to the infant. Example: adding sweet agents to prepared food or beverages.

  - If YES is checked then assign risk factor 411.

- Question #32 addresses improperly using nursing bottles or cups to feed juice.

- Question #33 addresses the age of the infant when juice was introduced. Examples would be using a bottle to feed fruit juice and any food other than breastmilk or iron-fortified infant formula before 4 months of age.
- Question #34 addresses feeding foods to an infant that could be contaminated with harmful microorganisms or toxins such as unpasteurized dairy products or uncooked luncheon meats (possible contamination with Listeria monocytogenes). Assign risk factor 411 if yes is checked for any item listed.
- Question #35, if the vegan or macrobiotic box is checked assign risk factor 411 based on feeding a diet very low in calories and/or essential nutrients.

  - The CPA or Nutritionist would need to gather more information related to the infant's diet if "other" was checked or marked to determine if risk factor 340 could be assigned.
- Question #37 under the section"Baby Bottles and Sippy Cups" addresses improperly using nursing bottles or cups to feed anything other than breastmilk or iron-fortified infant formula before 4 months of age. If yes is checked then risk factor 411 would be assigned.
- Questions #38, #39 and #41 are related to baby bottles and sippy cups. If the participant checks "Yes" on any of these questions (#38, #39, or #41) then risk factor (411) would be assigned.

  - Question #38 will also look at offering substances that are inappropriate in type or timing or potentially contaminated with harmful microorganisms or toxins (e.g., honey).

  - Question #40 looks at routinely using nursing bottles or cups improperly. This question will require further assessment by the CPA or Nutritionist when "No" is checked.
- Question #42 under the "Supplements" section looks at potentially feeding excess of recommended dosages of dietary supplements or not providing the necessary supplements. If "Yes" is checked then it would require further assessment by the CPA/Nutritionist to determine how many of the vitamins and minerals, or supplements the infant is taking and then determine if it is in excess based on the manufacturer's label or physician's order.
- Question #46 under the "Food Security and Program Participation" section looks at inappropriate sanitation in the preparation, handling, or storage of breastmilk or formula in relation to safe water supply, heat source for sterilization and appropriate refrigeration. This question will require further assessment by the CPA/Nutritionist when "No" is checked.

<u>Dietary Risk Factor 428 – Complementary Feeding Practices (Infants 4 to 12 months of age)</u>
Dietary Risk Factor 428 is based on dietary risk associated with complementary feeding practices.

- Questions #6 under the Caregiver's section – "What types of things can your baby do?" would require the CPA/Nutritionist to use critical thinking skills to determine if risk factor 428 could be assigned based on what is appropriate for the age and developmental skills of the infant.
- Question #29 - The process of adding foods to the diet of an infant should reflect the physical, intellectual, and behavioral stages as well as the nutrient needs of the infant or child. This question will allow the CPA/Nutritionist to determine if the infant consumes the appropriate foods or beverages by using critical thinking and assessment skills. Example: in Question #29, at 4 months the infant should be consuming cereal, 5 months vegetables, etc.

  - The AAP, Committee on Nutrition states that, "complementary foods may be introduced between ages 4 and 6 months" but cautions that actual timing of introduction of complementary foods for an individual infant may differ.

- Reference your USDA Revision 8 Dietary RF materials for more details.

- Question #36 under "Solid Foods and Juices" – "Does your baby routinely eat sweet foods like lollipops, candy, sweetened cereals, or desserts?" If yes is checked the CPA/Nutritionist would look at the items and amount listed to determine the potential for tooth decay and then determine whether risk factor 428 would be assigned.

Risk Factor 340 - Nutrition Related Risk Conditions

- Question #3 under the "Caregiver's" section, states, "Has the doctor ever told you that your baby has any medical conditions or illnesses?" If the parent/guardian checks "Yes", then the CPA/Nutritionist would need to assess if it meets the criteria for assigning risk factor 340.
- Question #22 under the "Formula" section, you will want to look at the type or name of formula being given. If the infant is consuming a special or exempt formula or medical foods product for a medical condition you may be able to assign risk factor 340 (Nutrition-Related Risk Conditions).
- Question #35 under the "Solid Foods and Juices" section – CPAs/Nutritionists would need to gather more details related to the infant's diet if "other" was checked or marked. Details could reveal a Nutrition Related Risk Condition in which risk factor 340 could be assigned.

Risk Factor 603 – Breastfeeding Complications or Potential Complications

Assign this risk factor to a breastfed infant with any of the following complications OR potential complications related to breastfeeding: jaundice, weak or ineffective suck, difficulty latching onto mothers' breast, and inadequate stooling (for age, as determined by a physician), and/or less than 6 wet diapers per day.

- Question #14 on the first page, under the "Breastfeeding" section states, "How is breastfeeding going?" If "Ok" or "not so good" is checked the CPA/Nutritionist would need to ask some additional open-ended questions to determine if this risk factor could be assigned. If "Yes" is checked on questions #16 & #17 further assessment by the CPA/Nutritionist is required to determine if any of the criteria for risk factor 603 (E5) are met.

Guidelines for Children's Nutrition Assessment Form

Subcategory numbers can be used to record the topic of the nutrition education in general notes provided to the participant, parent or caretaker, e.g. 425.1 (425 is the risk factor and 425.1 is the topic discussed.)

Dietary Risk Factor 425

Dietary Risk Factor 425 is based on routine use of feeding practices that may result in impaired nutrient status, disease, or heath problems.

- Question #6. This question is designed to assist the CPA/Nutritionist in critically thinking about foods that are appropriate for the developmental stage of the child. Notice that to the right of the question it lists all three risk factors (425, 428, and 381). An example for 381 would be to assess whether the food consistency is an indication of dental problems.

  - It is possible that all three could be assigned at one time.

- Question #17 located under the "Eating Pattern" section is based on feeding foods to a child that could be contaminated with harmful microorganisms(Listeria monocytegenes) such as in uncooked luncheon meats. If "Yes" is checked for any of these listed, then assign 425.

- Question #18 is based on ingestion of non-food items by the child. Pica has also been seen in children with obsessive-compulsive disorders, mental retardation, and sickle cell disease. If "Yes" was checked then risk factor 425 would be assigned.
- Question #19 listed under the "Eating Pattern" section. The question is designed to assist the CPA/Nutritionist in critically thinking about foods that are appropriate for the developmental stage of the child. Notice that you could assign both risk factors 425 and 428 to this question.
- Question #20. You would assign risk factor 425 if "Yes" is checked and they selected vegetarian, vegan, or macrobiotic diet. If they marked "other" the CPA/Nutritionist would gather more information and then possibly assign one of the risk factor 341 – 262 (Nutrition Related Risk Conditions).
- Question #22 located under the "Beverage" section looks at inappropriate beverages as the primary milk source. Examples of inappropriate beverages as the primary milk source would be: non-fat or reduced-fat milks (between 12 & 24 months of age only), or sweetened condensed milk, and imitation or substitute milks (such as inadequately or unfortified rice or soy-based beverages, and non-dairy creamer).
- Question #24 "What other beverages does your child drink in a typical day" looks for routinely feeding a child any sugar-containing fluids. We know that consumption of these beverages, which are high in sucrose, increases the risk of early childhood caries and tooth decay. Assign risk factor 425 if sports drinks, gelatin water/Kool-aid, regular pop/soda, water with sugar added, or fruit drinks are checked.

  - If coffee/tea were checked, further assessment by the CPA/nutritionist would be needed. It would require the CPA/Nutritionist to ask the parent/guardian additional questions to determine if these items are sweetened. If so, it may be possible to assign risk factor 425.
- Questions #27 through 30 under the "Baby Bottle and Sippy Cups" section looks at routinely using nursing bottles, cups or pacifiers improperly. CPAs/Nutritionists would assess for assignment of this risk factor based on the child's developmental or medical needs. For example, if it is a child with special needs, it may be appropriate to use a bottle or sippy cup. Another example would be a child who is using the bottle for feeding or drinking beyond 14 months of age, this would be improper use. (Pediatric dentists recommend infants are weaned from the bottle by 12-14 months of age.)
- Question #31 (Under the Supplement section) looks at excess amounts of potentially toxic dietary supplements and/or not providing recommended dietary supplements. One example of not providing the recommended dietary supplements to a child would be fluoride. This question would require further assessment by the CPA/Nutritionist to determine how many of the vitamins, minerals, or supplements the child is taking and then determine if it is in excess based on manufacturer's or physician's recommendations.

<u>Dietary Risk Factor 428 – Complementary Feeding Practice (Children 12 to 23 months)</u>
This risk factor addresses consuming complementary foods and beverages. The process of adding foods should reflect the physical, intellectual, and behavioral stages as well as the nutrient needs of the child.

- Question #6 under the "Caregiver" section could assist with determining if risk factor 428 could be assigned.
- Question #19 which is located under the "Eating Pattern" section can be assessed to see if risk factor 428 can be assigned as well.

Dietary Risk Factor 401- Failure to Meet Dietary Guidelines for Americans (STANDS ALONE)
The definition was revised to reflect the IOM recommendation for a presumed dietary risk for women and children 2 years of age and older. (Note: This criterion applies only to women and children older than 2 years of age because the *Dietary Guidelines* do not include recommendations for infants and young children birth to 2 years.) This criterion may only be assigned after the CPA/Nutritionist has reviewed a complete nutrition assessment and found that no other dietary risk factors could be assigned.

The woman or child must also be assessed to determine that no medical or health risk factors could be identified during the certification process. After assessing for both of these key points, if no other risk factors could be assigned to the woman or child, then risk factor 401 would be assigned on the initial certification.

This indicates that WIC presumes that the applicant or participant is at nutrition risk based on *failure to meet Dietary Guidelines for Americans*.

You only assign 401 when NO other risk factors could be assigned on the initial certification. It is a stand-alone risk factor.

Guidelines for Women's Nutrition Assessment Form
Subcategory numbers can be used to record the nutrition education topic provided to the participant, parent or caretaker, e.g. 427.1 (427 is the risk factor and 427.1 is the topic discussed.)

Dietary Risk Factor 427 - Dietary Risk Factor 427 is based on routine use of feeding practices that may result in impaired nutrient status, disease, or heath problems.

- Question #7, under the "Eating Pattern" section, "Are you following a special diet?" If Vegetarian, Vegan, or Macrobiotic were checked then dietary risk factor 427 would be assigned. Remember the .2 of 427.2 is the reference for the full USDA description of this risk factor.

  - If "other" were checked then the CPA/Nutritionist would use critical thinking skills and determine one of the risk factors 341 - 362 (Nutrition Related Risk Conditions) may also be assigned.

- Question #8, is related to the participant compulsively ingesting non-food items (Pica). If the participant checks "Yes" for any of the items listed then risk factor 427 would apply.

- Question #14, under the "Supplements" section. Look to see whether there is inadequate vitamin/mineral supplementation.

  - Examples would be a prenatal consuming less than 30 mg of iron daily or a non-pregnant woman consuming less than the recommended amount of folic acid.

- Question (#15) is related to the participant consuming excessive dietary supplements.

  - The question would require further assessment by the CPA to determine how many of the vitamins, minerals, or supplementation the woman is taking and then determine if it is in excess based on the manufacturer's label or physician's order.

- Question #22 under the "Pregnancy" section (this section would only be completed by the prenatal). If the participant checks "Yes" on any of the items listed and she is a **prenatal** then dietary risk factor 427 would apply.

Risk Factor 601 - Breastfeeding Woman of Infant at Nutritional Risk
This risk factor shall be assigned to a breastfeeding woman if her infant meets one of the infant's risk factors other than risk factor 702.

- Question #23, under the “Breastfeeding” section, would be completed by a participant who is currently breastfeeding. If she reports any concerns with breastfeeding the CPA/Nutritionist will use critical thinking skills to determine if she meets any of the criteria for risk factor 602.

  - Examples would be severe breast engorgement or mastitis. Additional criteria are listed in the risk factor 602 policy.

In summary
Only a few questions have been addressed. The CPA/Nutritionist will use critical thinking skills to determine if a risk factor(s) could be assigned when addressing these questions.

Nutrition Education and Goal Setting

The Nutrition Education tab of the Participant Folder allows the user to view previous nutrition education contacts with the participant, and add additional contacts if necessary.

The primary Individual Nutrition Education Contact is used when the participant has received their initial nutrition education contact. This nutrition education contact can be provided and assigned by either the WIC Certifier or CPA. The highlighted topics in the window are the components of the initial nutrition education contact. The secondary Nutrition Education Contacts can be provided and/or assigned as individual or group. The CPA must provided this contact and record it in the system. The goal setting can be completed by the CPA. Each participant shall have a nutrition/health goal. The CPA shall work with the participant to develop a participant-centered goal. Specifics about the goal can be recorded in the general/SOAP notes in MOWINS.

Goal setting is the process of determining what the participant’s goals are, working towards them and assessing whether their goals are met. A prevalent process for setting goals uses the SMART acronym: Specific, Measurable, Achievable, Realistic, and Timely. This process is recommended when writing participant-centered goals, however it is not mandatory.

S = Specific **M** = Measurable **A** = Attainable/Achievable **R** = Realistic **T** = Time Bound

Specific
A specific goal has a much greater chance of being accomplished than a general goal. Provide enough detail so that there is no indecision as to what exactly the participant should be doing. An example of a general goal would be, "*Increase consumption of fruits and vegetables*." But a specific goal would say, "*Increase fruit and vegetable consumption by including a serving at one meal per day*."

Measurable
Participant should choose a goal with measurable progress, so the participant can see the change as it occurs. A measurable goal has an outcome that can be assessed either on a sliding scale (1-10), or as a hit or miss, success or failure. Based on our example, “Increase *fruit and vegetable consumption by including a serving at one meal per day”* would be a measurable goal because we are measuring if the participant consumed fruits and vegetables one meal per day.

Attainable/Achievable

An achievable goal has an outcome that is realistic given the participant's current social, economic, or cultural resources and time available. Goal achievement may be more of a "stretch" if the outcome is difficult to begin with. Our example of a goal was to *"Increase fruit and vegetable consumption by including a serving at one meal per day."* Is consuming a serving of fruits and vegetables one meal a day possible for the participant? If not, then this would not be an attainable goal.

Realistic

Start small so the participant can experience the joy of meeting their goal. Gradually increase the intensity of the goal after having a discussion with the participant, parent or caretaker to redefine the goal. Is our example goal *" Increase fruit and vegetable consumption by including a serving at one meal per day"* realistic for a WIC participant's food budget? If not, then we might want to redefine the goal with the participant's assistance.

Time Bound

Set a timeframe for the goal: for next week, in three months, by six months. Setting an end point for the goal gives the participant a clear target to achieve. Nutrition follow-up ideally should occur within the 6-month certification period (best practice) but shall occur within one year or two certification periods or prior to the participant's change in categorical status.

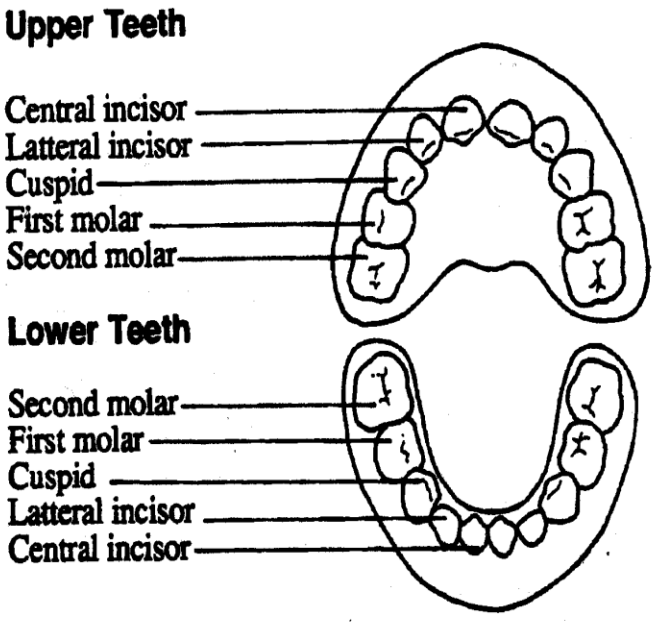
Remember that follow-up is an essential component of WIC value enhanced nutrition services provided for the benefit of program participants. Follow up should be provided to find out how the participant has addressed a nutrition issue, but should not replace a nutrition education contact/intervention.

Dental Health Guide
For
WIC Health Professionals

Conducting Oral Inspections

ERUPTION AND SHEDDING OF THE PRIMARY TEETH (BABY TEETH)

Remember that some children's teeth erupt earlier and some much later than the average eruption dates given here. A year on either side of the average eruption times is not unusual.

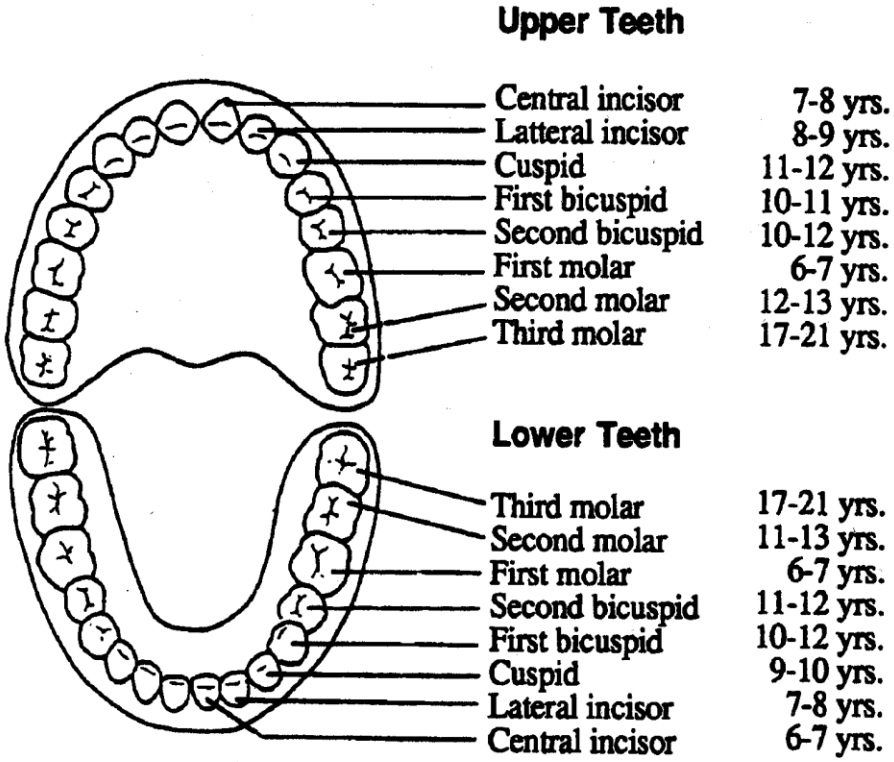


Upper Teeth	Eruption	Shedding
Central incisor	7½ mos.	7½ yrs.
Latteral incisor	9 mos.	8 yrs.
Cuspid	18 mos.	11½ yrs.
First molar	14 mos.	10½ yrs.
Second molar	24 mos.	10½ yrs.

Lower Teeth	Eruption	Shedding
Second molar	20 mos.	11 yrs.
First molar	12 mos.	10 yrs.
Cuspid	16 mos.	9½ yrs.
Latteral incisor	7 mos.	7 yrs.
Central incisor	6 mos.	6 yrs.

Reference: *Colorado Department of Health, Dental Health Section*

ERUPTION OF THE PERMANENT TEETH



Reference: *Colorado Department of Health, Dental Health Section*

Part I. CONDUCTING ORAL INSPECTIONS

Before one conducts an oral inspection, one should have a working knowledge of basic anatomy and physiology of the primary and permanent teeth. In addition, it is important to have an understanding of the processes of tooth decay (dental caries) and gum disease (peridontal disease).

WIC health personnel are not legally permitted to diagnose any oral findings. Your responsibility is to observe, record and refer to the family dentist any deviation from the normal appearance of the hard and soft tissues.

SYSTEMATIC SEQUENCE FOR INSPECTION

To prevent the possibility of overlooking an area and missing details of importance, the oral inspection should follow a definite systematic sequence:

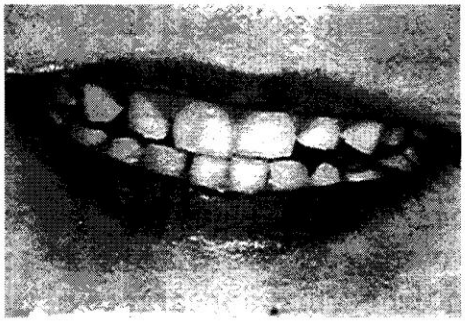
- Visual exam of tissue of the face and neck. Note any lesions, swelling, etc.
- Visual inspection of mucous membrane (lips, tongue, hard and soft palate, tonsillar region and cheeks). Note enlargements, redness, blisters, ulcers or growths.
- Visual inspection of teeth and gingiva. Note teeth discolorations or breakdown in tooth structure; gingiva changes in color, shape, position, or texture; and bleeding.

ADVANTAGES AND DISADVANTAGES

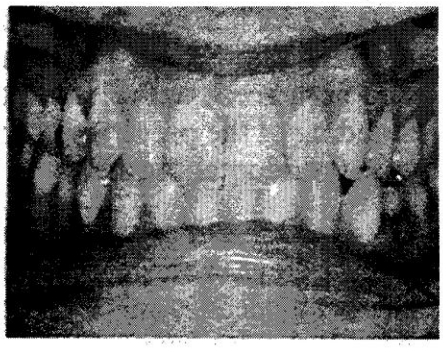
An oral inspection should be made at each certification and recertification visit. This inspection is important for several reasons. It builds positive attitudes in children toward dentistry and dental care. Oral inspection also provides documentation for assigning risk factor 381.

One main disadvantage of WIC oral inspections is that parents and children tend to accept this form of inspection as a replacement for their regular visits to the dentist.

ANATOMY & PHYSIOLOGY OF THE PRIMARY AND SECONDARY TEETH



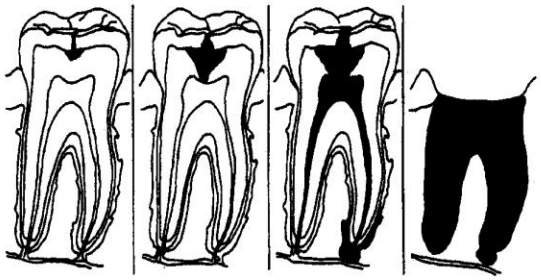
Primary



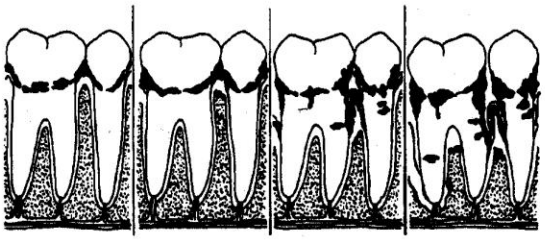
Permanent

DENTAL DISEASE PROCESS

Tooth decay (dental caries)



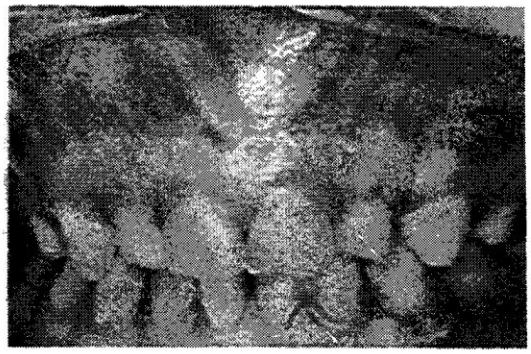
Gum disease (periodontal disease)

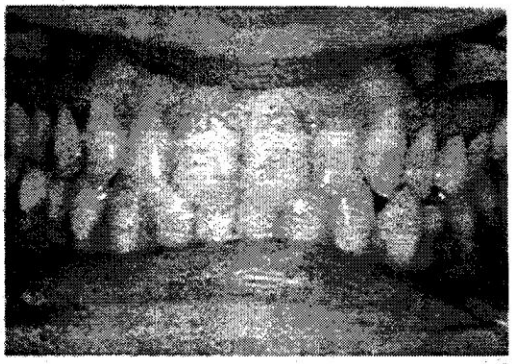


HEALTHY GUM TISSUE

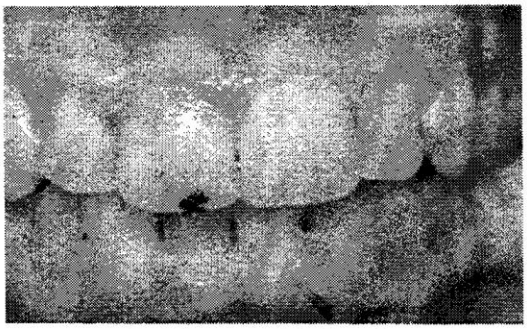
Color: Pale Coral pink. Variations in pigmentation are related to complexion and ethnic and racial background. Persons of races with darker skin may have areas of brown to black pigmentation.

Position: Childhood gingiva covers various portions of each tooth's crown, depending on the stage of eruption. Adolescent gingiva fits snugly around the neck of the tooth.





Contour: Gingival margin follows a curved line around each tooth. Interdental gingiva is pointed to fill the spaces between teeth.



Surface Texture: Free gingiva is smooth (about 1/ 16" band next to teeth); attached gingiva is stippled (orange peel effect).

Consistency: Firm and resilient with no bleeding when touched.

GUM DISEASE

Color: Changes from pale coral pink to red to bluish red, magenta or deep blue, shiny.

Position: Lowered level of gum line (more toward root of tooth). Free and/or interdental gingiva may be enlarged.

Contour: Bulbous or swollen gum tissue.

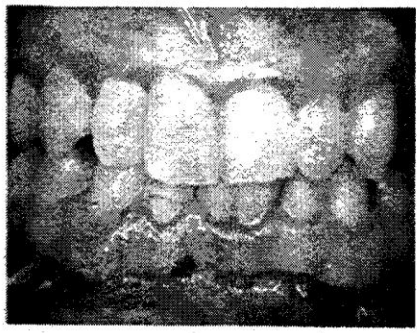
Consistency: Spongy, soft in acute inflammation; firm, hard, rubberlike in chronic inflammation.

NORMAL TOOTH STRUCTURE

Color: Varying shades of white; no discoloration.

Consistency: No signs of holes or broken down tooth structure.

Texture: Calcified outermost structure hard, glossy and smooth.



TOOTH DECAY & ASSOCIATED CHANGES

Color: Chalky white areas of decalcification. Grayish white discoloration may be around margins of previous restorations. In relation to an amalgam restoration (silver filling) dental caries appears translucent in the outer portion and white and opaque adjacent to the filling.

Open carious lesions (breakdown structure) vary in color from yellowish brown to dark brown. These changes indicate definite signs of dental caries or may lead the examiner to suspect dental caries.

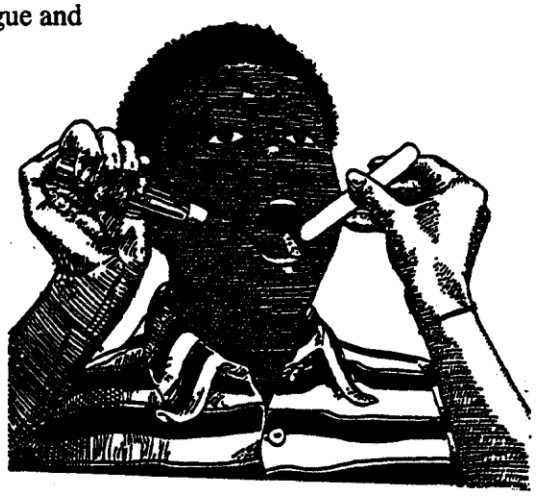
EQUIPMENT NEEDED FOR ORAL INSPECTION

Pen Light. Used to maintain clear vision. Technique for Use: Hold in pen grasp. Do not put pen light in the participant's mouth.

Tongue Depressor. Used to help facilitate direct vision; retract cheeks, lips and tongue; maintain clear vision. Technique for Use: Hold in pen grasp, moistened with water to prevent sticking on oral tissues. Use of tongue depressors, discarded after each patient, eliminates the need for instrument sterilization between patients.

Checklist for Conducting an Oral Inspection

- √ Look at person's face and lips to see if sores or swelling is present
- √ Look at front teeth and gums for abnormalities or sores
- √ Look for abnormalities in the back teeth by using the penlight and tongue blade
- √ Look at the roof of the mouth and palate for abnormalities or sores
- √ Look at cheeks on each side using the tongue blade and penlight to look for the same
- √ Ask the person to touch the roof of the mouth with his tongue and look under the tongue for same
- √ Write down any findings



What to look for:

- Black or brown spots on teeth and any obvious holes in teeth
- Stained or discolored teeth
- Red or bleeding gums
- Sores and infections in other areas of the mouth
- Crooked teeth, missing teeth, teeth growing in unusual places
- Listen for caregiver's concerns about teeth

Part II. DETECTING ORAL CONDITIONS

The oral tissues may be used as sensitive indicators of the general health of an individual. Changes in these structures may be the first signs of subclinical diseases in other parts of the body. This section describes some of the major disorders of the mouth as well as signs of general diseases which focus on the mouth.

ORAL CANCER

Oral cancer does not occur often in children. But it can occur and that's why you should be on the lookout for signs.

Signs: Swallowing difficulties; lumps along jaws and throat; white patches (leukoplakia); red spots on lips, tongue, palate, floor of mouth, inside of cheek and throat.

CHICKEN POX

Signs: Characteristic rash of white-topped pimples may appear in the mouth a day before the skin rash appears. The rash can also develop around the mouth later and mimic fever blisters.

LEUKEMIA

Leukemia often reveals its presence in and around the mouth.

Signs: Sore throat, swollen tonsils; gum tissue may start overgrowing, sores may develop inside the cheek, in the throat, and on the tonsils and on the lips.

MEASLES (rubeola)

Signs: Within 1-2 days of breaking out, Koplik's spots begin to appear in the mouth along the cheek lining. (Koplik's spots are tiny white pimples ringed in red. These pimples are absent in German measles.)

MUMPS

Mumps are usually spread by saliva.

Signs: Pain under both ears or under chin when child chews. Angle of child's jaw and behind and below ear will swell. Acidy foods, such as pickles and lemons, make pain worse.

CANKER SORES (aphthous ulcers)

Signs: Small ulcers inside the lips, cheeks or on the sides of the tongue. Unlike fever blisters, canker sores develop only on the wet pink tissues (mucosa). Yellow ulcer ringed by red. Painful, especially when eating oranges, chocolate or soft drinks.

FEVER BLISTERS (cold sores)

Signs: About 24 hours before a fever blister appears, area starts to itch and burn. It becomes an open sore with a yellow scab.

CRACKED LIPS

Usually these accompany the licking-the-lips habit and are simply the result of drying out the delicate tissues of the lips. They also accompany fever and sensitivity to the sun. A riboflavin deficiency (cheilosis) can cause lip cracks.

VITAMIN DEFICIENCIES

The mouth can provide clues to deficiencies in the body caused usually by a lack of vitamins in the diet and, occasionally, by some disorder or disease which prevents the body from properly using vitamins.

Vitamin C deficiency causes scurvy. The gums swell and bleed profusely around the teeth just erupting in younger children. In older children and adults, it can cause severe gingivitis and loss of teeth.

Vitamin D deficiency causes rickets. During tooth development, it can cause improper calcium metabolism. Thus, the enamel may be more prone to tooth decay. May also cause malocclusion (crooked teeth) because of poor jaw formation.

Vitamin K deficiency may increase susceptibility to dental decay and bleeding problems in gum tissue.

Niacin deficiency causes pellagra. The tongue may become fiery red, painful and smooth; small ulcers may form on the gums, tongue, cheeks and lips.

Riboflavin deficiency may cause chapped and cracked lips and sores at the corners of the mouth.

B6 deficiency may cause chapping of nostrils and lips, drying and cracking of lips. It can also increase susceptibility to dental decay.

This section on dental health is adapted from a manuscript by Maebe Brown, RDH., Missouri Department of Health

STANDARD ABBREVIATIONS AND MEANINGS:

Resource adopted from Missouri Department of Health and Nutrition Services,
Public Health Nursing Manual.

The following pages contain a listing of health-related abbreviations.

a.m.	morning
aa	of each
Ab	abortion
abd.	abdomen/abdominal
ABG	arterial blood gas(es)
ac	before meals
AD	right ear
ad lib	as desired
ADD	attention deficit disorder
ADHD	attention deficit disorder with hyperactivity
ADL	activities of daily living
adm	administer/admission
AEB	as evidenced by
AFB	acid fast bacilli
AGA	appropriate for gestational age
AKA	also known as
amb.	ambulate/ambulation
amt.	amount
ante	before
Ap/AP	apical pulse
appt.	appointment
AS	left ear
ASA	aspirin (acetylsalicylic acid)
ASAP	as soon as possible

ASD	atrial septal defect
ASHD	arteriosclerotic heart disease
ASVD	arteriosclerotic vascular disease
aud	auditory
Avg.	average
ax.	axillary
b.i.d.	twice a day
BCG	bacille Calmette-Guerin
BCP	birth control pills
BK	below knee
BKA	below knee amputation
BM	bowel movement
BMT	bilateral myringotomy with tubes
BOM	bilateral otitis media
BOW	bag of water
BP	blood pressure
BRP	bathroom privileges
BS	blood sugar
BSC	bed side commode
BTL	bilateral tubal ligation
BUN	blood urea nitrogen
C & S	culture and sensitivity
CC	chief complaint
C/O	complains of
C/S	caesarian section
c:	copy
CA	cancer/carcinoma
Ca	calcium
CM	case management

CO	carbon monoxide
CO2	carbon dioxide
COM	chronic otitis media
cont	continue
COPD	chronic obstructive pulmonary disease
CP	Cerebral Palsy
CPR	cardiopulmonary resuscitation
CSF	cerebrospinal fluid
CTX's	contractions
CV	clinic visit
CVA	cerebral vascular accident
Cx.	cervix
CXR	chest x-ray
cysto	cystoscopy
D&C	dilation & curettage
DCN	department client number
DDST	Denver Developmental Screening Test
D.M.	diabetes mellitus
DME	durable medical equipment
D/C	discharge/discontinue
DNKA	did not keep appointment
DOB	date of birth
Dr.	doctor
drsg.	dressing
DT	diphtheria and tetanus toxoids
DTP	diphtheria, tetanus, the pertussis
Dx.	diagnosis
EDC	estimated date of confinement
EDD	expected date of delivery

EEG	electroencephalogram
EKG/ECG	electrocardiogram
EI	early intervention
EMG	electromyleogram
EMT	emergency medical technician
enc	encouraged
ENT	ears, nose and throat
EPDST	Early Periodic Screening Diagnosis & Treatment
ER	emergency room
et al	and others
et	and
ETOH	ethyl alcohol
exp	expiration
F&C	foams and condoms
F/U	follow-up
Fa	father
FAS	fetal alcohol syndrome
FBS	fasting blood sugar
Fe	iron
FeSO4	ferrous sulfate
FH	fundal height
FHR	fetal heart rate
FHT	fetal heart tone
fib	fibrillation
FKC	fetal kick count
FM	fetal movement
FOB	foot of bed/father of baby
FP	family planning
FPC	family planning clinic

freq	frequent
FSH	follicle-stimulating hormone
FTT	failure to thrive
fx	fracture
FYI	for your information
G&D	growth & development
GA	gestational age
GB	gallbladder
GC	gonorrhea culture
GI	gastrointestinal
gm	gram
gr	grain
GRFA	grandfather
GRMO	grandmother
gt. or gtt	drop or drops
GTT	glucose tolerance test
GU	genito-urinary
GYN	gynecology
H or Hypo	hypodermic
H.C	head circumference
HCY	Healthy Children &Youth
h.s.	at bedtime
H202	hydrogen peroxide
H2O	water
HB	homebound
HBsAg	Hepatitis B surfact antigen
Hct.	hematocrit
Hgb.	hemoglobin
hosp	hospital

hr.	hour
ht	height
HV	home visit
hx	history
I&O	intake & output
i.e.	for example
ICU	intensive care unit
ID	intradermal
DM	insulin dependent diabetes mellitus
IEP	Individualized Education Plan
IM	intramuscular
incont.	Incontinent
indep	independent
info	information
INH	isonizaid
inj.	Inject
IPPB	intermittent positive pressure breathing
IPV	injectable polio vaccine
IFSP	Individualized Family Service Plan
IHP	Individualized Habilitation Plan
IUD	intrauterine device
IUGR	intrauterine growth retardation
IUP	intrauterine pregnancy
IV	intravenously
K	potassium
KCl	potassium chloride
Kg.	kilogram
JRA	juvenile rheumatoid arthritis
l	liter

Lab/lab	laboratory
LAP	laparotomy
lb.	pound
LE	lower extremity
LBW	low birth weight
lg.	large
LGA	large for gestational age
liq.	liquid
LLE	left lower extremity”
LLL	left lower lobe - lung
LLQ	left lower quadrant - abdomen
LMP	last menstrual period
Lt. or L	left
LUE	left upper extremity
LUL	left upper lobe - lung
LUQ	left upper quadrant - abdomen
lytes	electrolytes
m	meter/minim
M.D.	doctor of medicine
M.I.	myocardial infraction
mat	maternal
mcg	micrograms
MGF	maternal grandfather
MGM	maternal grandmother
micro	microscopic
ml	milliliter
MMR	measles, mumps, rubella vaccine
Mo	mother
mo	month

mod	moderate
MR	mental retardation
MR/DD	mental retardation/developmental disability
MS	multiple sclerosis
MSAFP	maternal serum alpha fetal protein test
MVA	motor vehicle accident
Neuro	neurology
Neuro-surg	neuro-surgical
N/A	not applicable
N/V or N&V	nausea & vomiting
Na	sodium
NaCl	sodium chloride
NCP	nursing care plan
neg	negative
ICU	newborn intensive care unit
NKA	no known allergies
NMN	no middle name
noc	night
NPO	nothing per os
NST	non stress test
NTG	nitroglycerin
o.d.	daily
O.T.	occupational therapy
O2	oxygen
OB	obstetrical/obstetrics
OC	oral contraceptives
occ.	occasional
OD	right eye
oint.	ointment

OM	otitis media
OP	outpatient
OPD	out patient department
OPV	oral polio vaccine
Ortho	orthopedic
OS	left eye
os	mouth
OT	occupational therapy
OTC	over the counter
OU	both eyes
OV	office visit
oz.	ounce
p.m.	afternoon
P.O.	phone order
Pap smear	Papanicolaou smear test
pc	after meals
PDA	patent ductus arteriosis
PE	physical examination
Ped/Peds.	pediatric
per os	by mouth
per	through, by
PERL	pupils equal, reactive to light
PERRLA	pupils equal, round, reactive to light, accommodation
PGF	paternal grandfather
PGM	paternal grandmother
PID	pelvic inflammatory disease
PIH	pregnancy induced hypertension
PKU	phenylketonuria
PMD	private medical doctor

PML	premature labor
PMP	previous menstrual period
PM & R	physical medicine & rehabilitation
PMS	premenstrual syndrome
po	by mouth
pos	positive
pre-op	preoperative
prep.	prepare for
prn	as needed
post-op	postoperative
PP	post partum/pelvic pressure
PPD	purified protein derivative (TB skin test)
PROM	premature rupture of membranes
PT	prothrombine time/protime/physical therapy
pt.	patient
PVC	premature ventricular contractions
PVD	peripheral vascular disease
QA	quality assurance
q.h.	every hour
q.h.s.	every night at bedtime
q.i.d.	four times a day
qt	quart
R/O	rule out
r/t	related to
RBC	red blood count
RDS	respiratory distress syndrome
re:	regarding
rec	recommended
reg	regular

rehab	rehabilitation
RH	rhesus factor
RLE	right lower extremity
RLL	right lower lobe—lung
RLQ	right lower quadrant—abdomen
ROI	release of information
ROM	rupture of membranes/range of motion
Rt. or R	right
RTC	return to clinic
RUE	right upper extremity
RUL	right upper lobe—lung
RUQ	right upper quadrant—abdomen
Rx	prescription
SE	side effects
ST	speech therapy
S/S	signs and symptoms
SBE	self breast exam
SGA	small for gestational age
SGOT	serum glutamic oxalacetic transaminase
SGPT	serum glutamic pyruoic transaminase
Sig	write on label
SLE	systemic lupus erythematosus
sm	small
SMAC	chem 23 blood test
SN	skilled nursing
SNF	skilled nursing facility
SOB	short of breath
SOM	serous otitis media
sol.	solution

sp. gr.	specific gravity
sp.	spontaneous
SP	speech pathologist
spec	specimen
Staph.	staphylococcus
SSI	social security income
SSDI	social security disability income
SSN	social security number
STAT	immediately and once only
STD	sexually transmitted disease
Strep.	streptococcus
subl.	sublingual
subq/SQ	subcutaneous
susp	suspension
T&A	tonsillectomy and adenoidectomy
t.i.d.	three times a day
T.O.	telephone order
T/temp.	temperature
TAB	therapeutic abortion
tab.	tablet
TB	tuberculosis
TBI	traumatic brain injury
tbsp.	tablespoon
TC	telephone call
Td	tetanus diphtheria vaccine
TENS	transcutaneous electric nerve stimulator
TIA	transcient ischemic attack
TM	tympanic membrane
TOC	test of cure

tol.	tolerate
TOPV	trivalent oral polio vaccine
TPN	total parenteral nutrition
TPR	temperature, pulse & respiration
tr./tinct	trace/tincture
tsp.	teaspoon
TUR	transurethral resection
Tx.	therapy/treatment
Ua/UA	urinalysis
UE	upper extremity
URI	upper respiratory infection
US	ultrasound
USGA	ultrasound gestational age
UTI	urinary tract infection
V.O.	verbal order
vag.	vagina/vaginal
VBAC	vaginal birth after caesarian
VD	venereal disease
VDRL	venereal disease research laboratory test
Vit.	vitamin when followed by specific letter
VLBW	very low birth weight
VS	vital signs
VSD	ventricular septal defect
WBC	white blood count
WC or w/c	wheel chair
wk	week
WNL	within normal limits
wt.	weight
y/o	years old

/	per (when uses to define frequency; i.e., 2/wk)
X	times (3X, 1X, etc.)

COMMONLY USED ABBREVIATIONS IN RECORDING OF HISTORY AND PHYSICAL EXAM FINDINGS

History

C.C.	chief complaint
P.I.	present illness
R.O.S.	review of systems
PMH	past medical history
L.M.P.	last menstrual period
Hx	history
G & D	growth and development

Eyes

PERRLA	pupils equal, round, reactive to light and accommodation
EOM	extraocular movements or extraocular muscles
A-V nicking	arteriovenous nicking
A-V ratio	artery to vein ratio
o.s. or OS	left eye
o.d. or OD	right eye
o.u. or OU	both eyes

Ears

AD	right ear
AS	left ear
TM	tympanic membrane
AC	air conduction

BC	bone conduction

Chest, Lungs, Heart

A.P.	apical pulse
BP	blood pressure
C-R	cardio-respiratory
CV	cardiovascular
ICS	intercostal space
A/P	anterior to posterior
MCL	midclavicular line
P/A	posterior to anterior
S1, S2, S3, S4,	1st heart sound, 2nd heart sound, 3rd heart sound, 4th heart sound
L.L.S.B.	left lower sternal border
L.B.C.D.	left border of cardiac dullness
P.M.I.	point of maximal intensity
A/V	arterial/venous
RRR	rate and rhythm regular

Musculoskeletal/Neurological

TMJ	temporomandibular joint
ROM	range of motion
DTR	deep tendon reflex
CVA	custo-vertebral angle

General

TPR	temperature, pulse, respiration
HEENT	head, eyes, ears, nose, throat
EENT	eyes, ears, nose, throat
ENT	ears, nose, throat

GI	gastrointestinal
GU	genitourinary
HC	head circumference
F.O.C.	frontal-occipital circumference
PE	physical exam
insp.	inspection
palp.	palpation
perc.	percussion
ausc.	auscultation
S.	subjective
O.	objective
A.	assessment
P.	plan
Ht.	height
Wt.	weight
L or l	left
R or r	right

Fetal Position & Presentation

LFA (RFA)	left frontoanterior (right)
LFP (RFP)	left frontoposterior (right)
LFT (RFT)	left frontotransverse (right)
LMA (RMA)	left mentoanterior (right)
LMP (RMP)	left mentoposterior (right)
LMT (RMT)	left mentotransverse (right)
LOA (ROA)	left occiput anterior (right)
LOP (ROP)	left occiput posterior (right)
LOT (ROT)	left occiput transverse (right)
LSA (RSA)	left sacrum anterior (right)

LSP (RSP)	left sacrum posterior (right)
LST (RST)	left sacrum transverse (right)